Chuitna WER questions
Latimer, Henry
to:
William Beckwith
05/07/2010 08:13 AM
Cc:
Dan Graham, "Rimelman, Ronald", "Diamond, Jerry"
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From: "Latimer, Henry" <Henry.Latimer@tetratech.com>
To: William Beckwith/R10/USEPA/US@EPA,
Cc: Dan Graham <dan@pacrimcoal.com>, "Rimelman, Ronald" <Ronald.Rimelman@tetratech.com>, "Diamond, Jerry" <Jerry.Diamond@tetratech.com>
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1 Attachment

Nominal vs measured values 20100422.docx

Bill,
Following up on some of your questions regarding the WER study we completed for PacRim on the Chuitna Basin, we have attached a summary of the nominal and measured metal values and described the approach used to calculate measured values. The nominal and measured chemistry data are attached as tables which correspond to tables in the report (the table numbers and names are the same), but just with added nominal values. The measuring methodology is described below:

The following procedures were followed to determine the actual concentrations of metal in each test concentration (the total metal was used for aluminum and the dissolved fraction for copper, lead, and zinc). For each test we prepared metal solutions at nominal concentrations. We took initial (0-hr.) and final (solution taken out at renewal or test breakdown, depending on if a renewal was required) samples for each testing solution. These were then sent to the lab to determine the actual metal concentration of the solution. In keeping with EPA guidance, only the controls, the highest nominal concentration with 100% survival, the lowest nominal concentration with 0% survival, and all nominal concentrations with survival between 0% and 100% were sent for analysis. To determine the actual metal concentration at each concentration, an average was taken of the measured initial and final concentrations. For those test concentrations for which samples were not measured, the following approach was used to determine the actual test concentration: 1) the measured initial and final metal concentration at each test concentration were divided by the nominal concentration to calculate a ratio, 2) the initial and final ratios were averaged to determine a single ratio for each test concentration, 3) the ratios were multiplied by the nominal concentration to give an estimated initial and final concentration based on the measured values, and 4) these estimated initial and final values were then averaged to determine the metal concentrations used for calculating the LC_{50} values.

Please let us know if you have any additional questions or if you'd like to discuss this information.

Thanks,
Henry

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